Sexual sterilisation device

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Abstract of **GB2190297**

The device comprises a pair of hinged jaws, (12,14;52,54) made of plastics material which close together to occlude a duct clamped between the jaws. The jaws are preferably lined with a silicone or similar rubber (20,22;64) material and can be provided with serrations or teeth which may be cross hatched to hold the duct in position during closure of the clip and the jaws can be provided with at least one permanent latch arrangement (28,30;58,60) which prevents opening of the clip once the clip has been fully closed. The clip may also include an auxiliary tongue (18;62) and may be moulded in one piece with a thinned portion (56) forming the hinge.

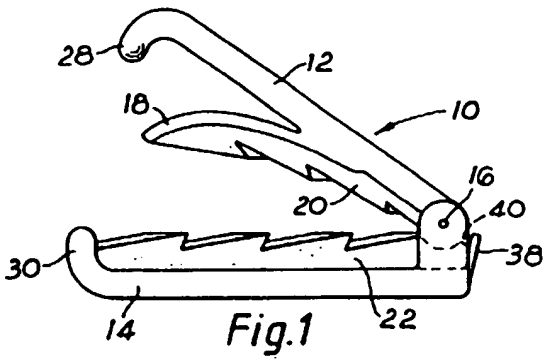

Fig.1

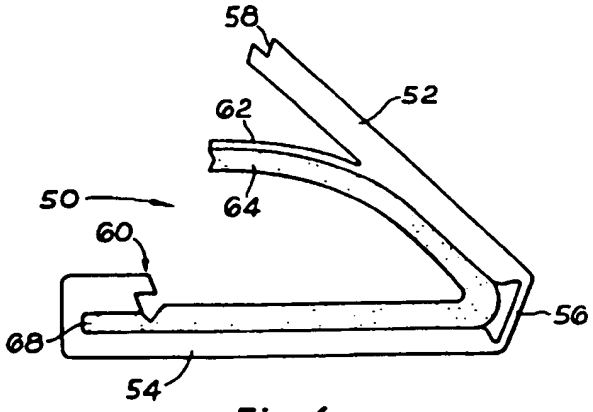

Fig.6

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GB A 2069848	WO A1 83/03345	US 4212303
GB 1420459	WO A1 80/01752	US 4188953
GB 1020035	US 4394864	US 3766925
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(58) Field of search
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Selected US specifications from IPC sub-class A61B

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(54) Sexual sterilisation device

(57) The device comprises a pair of hinged jaws, (12,14;52,54) made of plastics material which close together to occlude a duct clamped between the jaws. The jaws are preferably lined with a silicone or similar rubber (20,22;64) material and can be provided with serrations or teeth which may be cross hatched to hold the duct in position during closure of the clip and the jaws can be provided with at least one permanent latch arrangement (28,30;58,60) which prevents opening of the clip once the clip has been fully closed. The clip may also include an auxiliary tongue (18;62) and may be moulded in one piece with a thinned portion (56) forming the hinge.

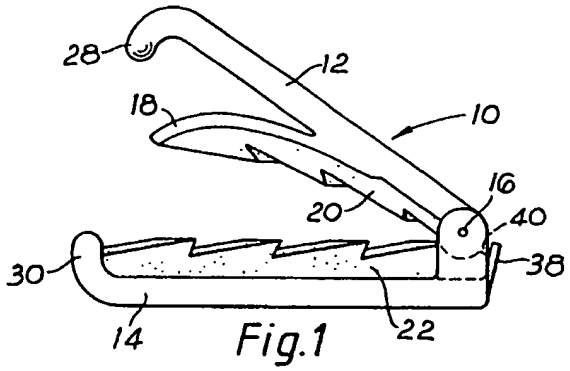

Fig.1

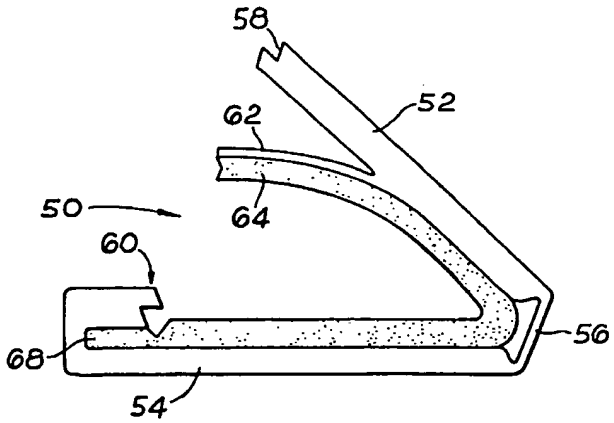

Fig. 6

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The drawings originally filed were informal and the print here reproduced is taken from a later filed formal copy.

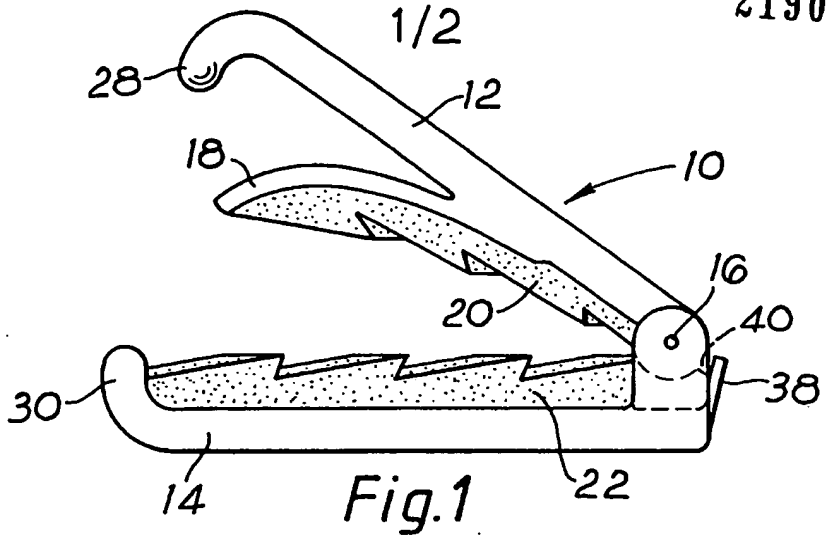

Fig.1

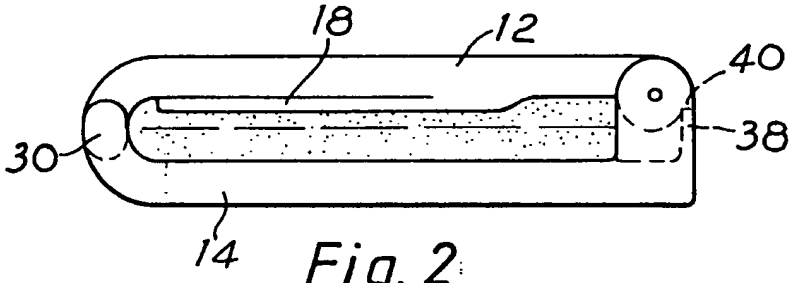

Fig. 2

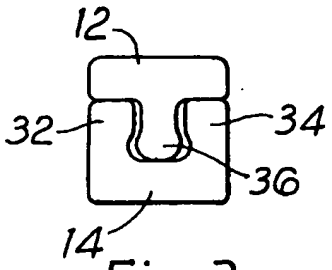

Fig. 3

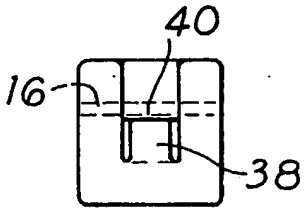

Fig. 4

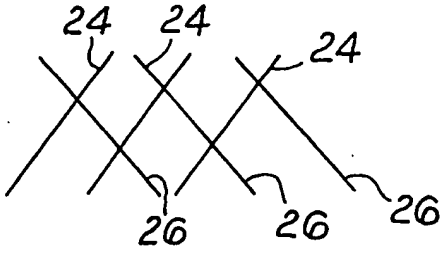

Fig. 5

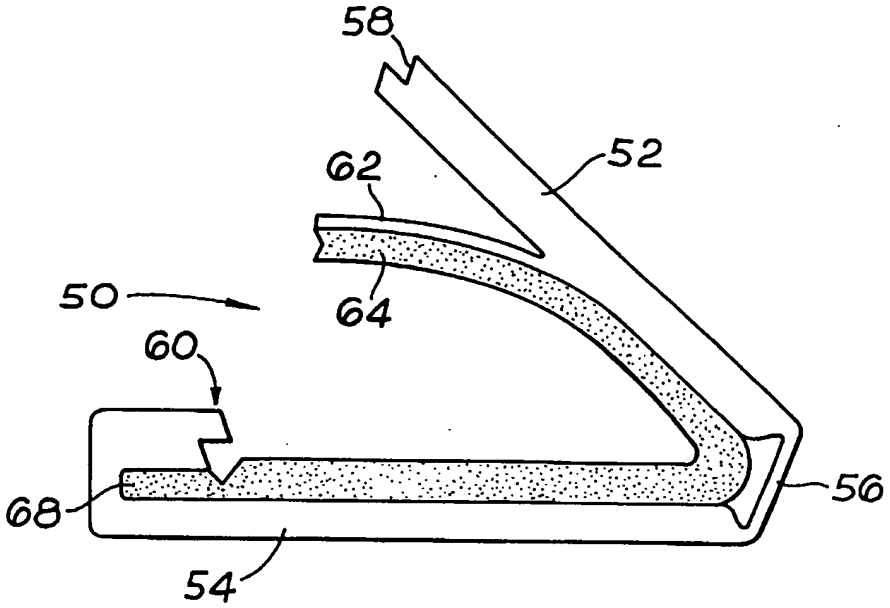

Fig. 6

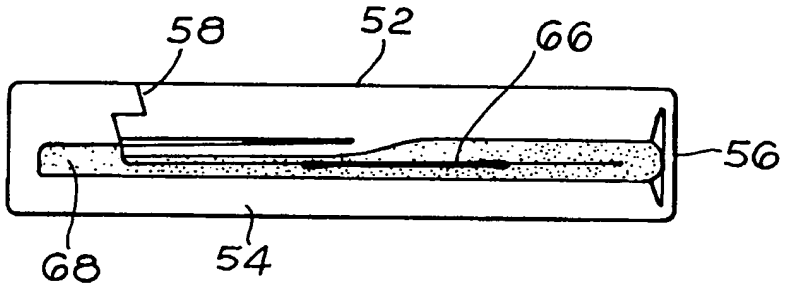

Fig. 7

SPECIFICATION

Sexual sterilisation device

The present invention relates to a sexual sterilisation device and more particularly to a clip adapted to be clamped on a Fallopian tube or a vas deferens to effect occlusion thereof.

U.K. Patent No. 1,530,282 and our co-pending Patent Application No. 8517468 describe clips of this type but these are designed primarily to be made with a metallic frame. Since the metal from which the clips are made is of a high quality metal such as commercially pure titanium the clips are relatively expensive to produce.

It is an object of the present invention to provide a clip of this type which can be made using a frame of plastics material if required.

According to the present invention there is provided a sexual sterilisation device in the form of a clip adapted to be clamped on and thereby to occlude a duct through which gametes pass, the clip comprising a pair of clamping jaws hinged together the jaws being constrcured from a frame of plastics material.

Preferably the frame of plastics material is provided with an internal lining of silicone rubber.

The frame preferably comprises an upper jaw member and a lower jaw member, the upper jaw member being provided with a male fixing portion intermateable with a female fixing portion on the lower jaw member.

Preferably the silicone rubber lining is provided with a teeth-shaped internal profile, the teeth pointing inwardly towards the hinge.

The clip is preferably also provided with a further catch member at the hinge end of the clip to provide an effective further locking of the clip in the closed position.

Embodiments of the present invention will now be described with reference to the accompanying drawings, in which:

Figure 1 shows a clip according to the present invention in side elevation in an open position;

Figure 2 shows the clip of Figure 1 in a closed position;

Figure 3 shows the clip of Figure 1 in front elevation;

Figure 4 shows the clip of Figure 1 in rear elevation;

Figure 5 shows the relative disposition of the teeth on the upper and lower jaw members;

Figure 6 shows an alternative clip according to the present invention shown in an open position; and

Figure 7 shows the clip of Figure 6 in its closed position.

With reference now to the drawings the clip 10 comprises a first or upper jaw member 12 and a second or lower jaw member 14. The jaw members 12 and 14 are preferably made from a rigid plastics material and are joined together by a hinge pin 16 preferably of commercially pure titanium.

The upper jaw 12 is formed with a flexible tongue member 18 and the upper and lower jaw members are lined with very soft silicone rubber linings 20, 22 which may be glued onto the respective jaws or studded into position with respective holes and lugs sufficient to hold the linings in place prior to closure of the clip.

With reference also to Figure 5 the linings 20 and 22 are profiled to have teeth 24, 26 respectively oriented at different angles to the jaw members as shown in Figure 5. The teeth are used to help to capture the fallopian tube (etc) on closure and the different orientation of the upper and lower teeth assists in this process.

The upper jaw 12 is also provided with a male catchment portion 28 which co-operates, in the closed position of the clip, with a female catchment member 30 on the lower jaw member 14. The female jaw member 30 comprises (Figure 3) two upstanding fingers 32, 34 shaped so that a broadened portion 36 of portion 28 can snap into position therebetween in the closed position of the clip.

The bottom jaw member is also preferably provided with a secondary latching means comprising an upstanding flexible latch 38 which in the closed position of the clip snaps into a recessed ledge portion 40 (shown dotted in Figure 1) profiled within the hinge portion of the upper jaw member 12.

In operation the flexible spur or tongue 18 captures the fallopian tube at the front end before final closure of the clip. The thickness and positioning of the silicone rubber liners 20, 22 is designed to give the desired pressure on the fallopian tube on closure of the clip. The clip can, prior to the final pressure to close and latch members 38, 40, be opened and closed in a partial manner to adjust the position of the clip.

When finally closed the clip is not able to be opened without considerable force due to the rear latching members 38, 40 and is therefore safe to use.

The plastics material from which the clip is made may be impregnated with barium sulphate to make the clip X-ray or radio detectable thereby facilitating remote positioning of the clip.

With reference to Figures 6 and 7 an alternative design of clip 50 is shown again comprising an upper jaw 52 and a lower jaw 54. The two jaw members are joined together by a hinge member 56 which is formed from a restricted section of the plastics material thereby allowing the clip to be moulded in one peice. The upper jaw 52 is provided with a recessed portion 58 providing a protrusion which in the closed positon co-operates with a recessed portion 60 in the lower jaw 54.

The upper jaw is provided with a flexible spur or tongue 62 as in the embodiment of Figures 1 to 5 and the inner surface of the clip is lined with a silicone rubber liner 64.

When closed the fallopian tube 66 (Figure 7) is completely closed since the silicone rubber lining 64 leaves no space within the clip. The end of the clip as indicated at 68 is fully lined so that there is no possibility of even the smallest space being left within the clip for any gametes to pass.

As in Figure 5 the silicone rubber lining can be provided with opposing teeth to assist in capturing the fallopian tube. The curved tongue initially grasps the fallopian tube for initial capture preventing the escape of the tube on the final forceful closure.

CLAIMS

1. A sexual sterilisation device in the form of a clip adapted to be clamped on and thereby to occlude a duct through which gametes pass, the clip comprising a pair of clamping jaws hinged together the jaws being constructed from a frame of plastics material.

2. A sexual sterilisation device as claimed in Claim 1 in which the frame of plastics material is provided with an internal lining of silicone rubber.

3. A sexual sterilisation device as claimed in Claim 2 in which the frame preferably comprises an upper jaw member and a lower jaw member, the upper jaw member being provided with a male fixing portion intermateable with a female fixing portion on the lower jaw member.

4. A sexual sterilisation device as claimed in Claim 3 in which the silicone rubber lining is provided with a teeth-shaped internal profile, the teeth pointing inwardly towards the hinge.

5. A sexual sterilisation device as claimed in any one of Claims 1 to 4 in which the clip is also provided with a further catch member at the hinge end of the clip to provide an effective further locking of the clip in the closed position.

6. A sexual sterilisation dedvice as claimed in any one of Claims 1 to 5 in which one of the clamping jaws is provided with a flexible spur (or tongue) shaped to protrude from the inner surface of the jaw towards the opposite end to the hinge such that during application the flexible spur captures the fallopian tube prior to final closure of the clip.

7. A sexual sterilisation device as claimed in Claim 4 or Claim 6 when dependent on Claim 4 in which the teeth profiles on the upper and lower jaws are at an angle with respect to each other to provide a cross over effect thereby assisting in retaining the fallopian tube in position within the jaws during closure of the jaws.

8. A sexual sterilisation device as claimed in any one of Claims 1 to 7 in which the pair of clamping jaws are formed integrally from a single plastic moulding, the hinge being formed from a reduced section of the flexible plastics material.

9. A sexual sterilisation device substantially as described with reference to the accompanying drawings.

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